UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MD 20755-5350

ORIGINAL

DATE : December 7, 2000

SUBJECT: Region III Data QA Review

FROM : Fredrick Foreman
Region III ESAT RPO (3ES20)

TO : Michael Towle
Regional Program Manager (3HS21)

Attached is the organic data validation report for the 12th Street Landfill site (Case#: 28689, SDG#: C02Q7) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

The format of this validation report has changed. It will no longer include copies of the CLP forms. This change was driven in part by a need to reduce the amount of paper utilized. I will continue to retain copies of the CLP forms and they will be available upon request.

If you have any questions regarding this review, please call me at (410) 305-2629.

Attachment

cc: (b) (4) (Tetra Tech EMI)

WA File: 0300402 TDF# 1141

OFFICE OF ANAYTICAL SERVICES AND QUALITY ASSURANCE

ORIGINAL

SDG McOIE1

Lockheed Martin Environmental Services
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN

DATE: December 4, 2000

SUBJECT: Level M1 Organic Data Validation for Case 28689
SDG: C02Q7
Site: 12th Street Landfill

FROM: (b) (4) MR
Senior Data Reviewer

(b) (4) m
Senior Oversight Chemist

TO: Fredrick Foreman
ESAT Regional Project Officer

OVERVIEW

Case 28689, Sample Delivery Group (SDG) C02Q7, consisted of one (1) soil sample submitted to Mitkem Corporation (MITKEM) for volatile, semivolatile and pesticide/PCB analyses. No field blanks were included in sample set. Sample was analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) OLM04.2 through Routine Analysis Services (RAS) program.

SUMMARY

Data were validated according to Innovative Approaches for Validation of Organic Data, Level M1, which includes the evaluation of action limits, laboratory and field blanks, sample paperwork, retention times, mass spectra, and chromatograms. Level M1 review excludes evaluation of quality control forms, calibration, and raw data. Although not required by M1 review, the reviewer observed three (3) Minor Problems during the assessment of data quality. Data were qualified accordingly, based on Region 3 guidelines. All samples were successfully analyzed for all target compounds.

Samples C02Q7 reported positive results for Aroclor 1260. In pesticide/PCB analyses, where multi-component compounds are present, false positives for single component compounds are common. Caution should be exercised in interpreting positive pesticide results in this sample.

MINOR PROBLEMS

- Volatile sample C02Q7 reported area counts for internal standard chlorobenzene-d5 outside lower Quality Control (QC) limit. Results were confirmed as matrix effect by similar results reported in Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of sample. Positive results associated with this standard were qualified "J". Quantitation limits were qualified "UJ" on Data Summary Form (DSF).

All data for Case 28689, SDG C02Q7, were reviewed in accordance with Innovative Approaches for Validation of Organic Data, Region III, June 1995.

ATTACHMENTS

1)	Appendix A	Glossary of Data Qualifier Terms
2)	Appendix B	Data Summary Forms
3)	Appendix C	Chain of Custody Records
4)	Appendix D	Laboratory Case Narrative

DCN: 28689rpt

ORIGINAL

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

ORIGINAL

DATA SUMMARY FORM: VOLATILES

Case #: 28689
Site :
Lab. :

SDG : C02Q7
12TH STREET LANDFILL
MITKEM

Number of Soil Samples : 1
Number of Water Samples : 0

Sample Number :	C02Q7									
Sampling Location :	S-1									
Field QC:										
Matrix :	Soil									
Units :	ug/Kg									
Date Sampled :	11/6/00									
Time Sampled :	10:20									
%Moisture :	35									
pH :	7									
Dilution Factor :	0.98									

Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	10										
Chloromethane	10										
Vinyl Chloride	10										
Bromomethane	10										
Chloroethane	10										
Trichlorofluoromethane	10										
1,1-Dichloroethene	10										
1,1,2-Trichloro-1,2,2-trifluoroethane	10										
Acetone	10	57									
Carbon Disulfide	10										
Methyl Acetate	10										
Methylene Chloride	10										
trans-1,2-Dichloroethene	10										
Methyl tert-Butyl Ether	10										
1,1-Dichloroethane	10										
cis-1,2-Dichloroethene	10										
2-Butanone	10	16									
Chloroform	10	2	B								
1,1,1-Trichloroethane	10										
Cyclohexane	10										
Carbon Tetrachloride	10										
Benzene	10	2	J								
1,2-Dichloroethane	10										
Trichloroethene	10										
Methylcyclohexane	10										
1,2-Dichloropropane	10										
Bromodichloromethane	10										
cis-1,3-Dichloropropene	10										
4-Methyl-2-pentanone	10		U								
Toluene	10		U								
trans-1,3-Dichloropropene	10										
1,1,2-Trichloroethane	10										
Tetrachloroethene	10	3	J								

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

SEE NARRATIVE FOR CODE DEFINITIONS

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ORIGINAL

DATA SUMMARY FORM: VOLATILES

Case #: 28689
Site :
Lab. :

SDG : C02Q7
12TH STREET LANDFILL
MITKEM

Number of Soil Samples : 1
Number of Water Samples : 0

Sample Number :		C02Q7									
Sampling Location :		S-1									
Field QC:											
Matrix :		Soil									
Units :		ug/Kg									
Date Sampled :		11/6/00									
Time Sampled :		10:20									
%Moisture :		35									
pH :		7									
Dilution Factor :		0.98									
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2-Hexanone	10		U								
Dibromochloromethane	10		U								
1,2-Dibromoethane	10		U								
Chlorobenzene	10		U								
Ethylbenzene	10		U								
Xylenes (total)	10		U								
Styrene	10		U								
Bromoform	10		U								
Isopropylbenzene	10	24	J								
1,1,2,2-Tetrachloroethane	10		U								
1,3-Dichlorobenzene	10		U								
1,4-Dichlorobenzene	10		U								
1,2-Dichlorobenzene	10		U								
1,2-Dibromo-3-chloropropane	10		U								
1,2,4-Trichlorobenzene	10		U								

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

SEE NARRATIVE FOR CODE DEFINITIONS

ORIGINAL

DATA SUMMARY FORM: BNA

Case #: 28689
Site :
Lab. :

SDG : C02Q7
12TH STREET LANDFILL
MITKEM

Number of Soil Samples : 0
Number of Water Samples : 0

Sample Number :	C02Q7									
Sampling Location :	S-1									
Field QC:										
Matrix :	Soil									
Units :	ug/Kg									
Date Sampled :	11/6/00									
Time Sampled :	10:20									
%Moisture :	35									
pH :	7.4									
Dilution Factor :	1.0 / 16.0									
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	330	73	J								
Phenol	330										
bis-(2-Chloroethyl) ether	330										
2-Chlorophenol	330										
2-Methylphenol	330										
2,2'-oxybis(1-Chloropropane)	330										
Acetophenone	330	100	J								
4-Methylphenol	330										
N-Nitroso-di-n-propylamine	330										
Hexachloroethane	330										
Nitrobenzene	330										
Isophorone	330										
2-Nitrophenol	330										
2,4-Dimethylphenol	330										
bis(2-Chloroethoxy)methane	330										
2,4-Dichlorophenol	330										
Naphthalene	330	69	J								
4-Chloroaniline	330										
Hexachlorobutadiene	330										
Caprolactam	330										
4-Chloro-3-methylphenol	330										
2-Methylnaphthalene	330	160	J								
Hexachlorocyclopentadiene	330										
2,4,6-Trichlorophenol	330										
2,4,5-Trichlorophenol	830										
1,1'-Biphenyl	330	110	J								
2-Chloronaphthalene	330										
2-Nitroaniline	830										
Dimethylphthalate	330	73	J								
2,6-Dinitrotoluene	330										
Acenaphthylene	330										
3-Nitroaniline	830										

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

SEE NARRATIVE FOR CODE DEFINITIONS

ORIGINAL

DATA SUMMARY FORM: BNA

Case #: 28689
Site :
Lab. :

SDG : C02Q7
12TH STREET LANDFILL
MITKEM

Number of Soil Samples : 0
Number of Water Samples : 0

Sample Number :		C02Q7									
Sampling Location :		S-1									
Field QC:											
Matrix :		Soil									
Units :		ug/Kg									
Date Sampled :		11/6/00									
Time Sampled :		10:20									
%Moisture :		35									
pH :		7.4									
Dilution Factor :		1.0 / 16.0									
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Acenaphthene	330										
2,4-Dinitrophenol	830										
4-Nitrophenol	830										
Dibenzofuran	330	71	J								
2,4-Dinitrotoluene	330										
Diethylphthalate	330										
Fluorene	330										
4-Chlorophenyl-phenyl ether	330										
4-Nitroaniline	830										
4,6-Dinitro-2-methylphenol	830										
N-Nitrosodiphenylamine	330	210	J								
4-Bromophenyl-phenylether	330										
Hexachlorobenzene	330										
Atrazine	330										
Pentachlorophenol	830										
Phenanthrene	330	170	J								
Anthracene	330										
Carbazole	330										
Di-n-butylphthalate	330	360	J								
Fluoranthene	330	110	J								
Pyrene	330	380	J								
Butylbenzylphthalate	330	550	J								
3,3'-Dichlorobenzidine	330		UJ								
Benzo(a)anthracene	330	100	J								
Chrysene	330	200	J								
bis(2-Ethylhexyl)phthalate	330	39000 +	J								
Di-n-octylphthalate	330	120	J								
Benzo(b)fluoranthene	330	160	J								
Benzo(k)fluoranthene	330		UJ								
Benzo(a)pyrene	330	93	J								
Indeno(1,2,3-cd)pyrene	330	100	J								
Dibenzo(a,h)anthracene	330		UJ								
Benzo(g,h,i)perylene	330	200	J								

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

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+ results reported from 16X dilution

ORIGINAL

DATA SUMMARY FORM: PESTICIDES AND PCBS

Case #: 28689
Site :
Lab. :

SDG : C02Q7
12TH STREET LANDFILL
MITKEM

Number of Soil Samples : 0
Number of Water Samples : 0

Sample Number :		C02Q7									
Sampling Location :		S-1									
Field QC:											
Matrix :		Soil									
Units :		ug/Kg									
Date Sampled :		11/6/00									
Time Sampled :		10:20									
%Moisture :		35									
pH :		7.4									
Dilution Factor :		1.0									
Pesticide/PCB Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	1.7										
beta-BHC	1.7										
delta-BHC	1.7										
gamma-BHC (Lindane)	1.7										
Heptachlor	1.7										
Aldrin	1.7										
Heptachlor epoxide	1.7	4.4	J								
Endosulfan I	1.7										
Dieldrin	3.3										
4,4'-DDE	3.3										
Endrin	3.3										
Endosulfan II	3.3										
4,4'-DDD	3.3	7.4	J								
Endosulfan sulfate	3.3										
4,4'-DDT	3.3	12	J								
Methoxychlor	17										
Endrin ketone	3.3										
Endrin aldehyde	3.3										
alpha-Chlordane	1.7	8.5	J								
gamma-Chlordane	1.7										
Toxaphene	170										
Aroclor-1016	33										
Aroclor-1221	67										
Aroclor-1232	33										
Aroclor-1242	33										
Aroclor-1248	33										
Aroclor-1254	33										
Aroclor-1260	33	130									

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (100 - %Moisture) / 100

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Appendix C

Chain of Custody Records

28689

U.S. EPA Region III Sample Scheduling Request Form

ORIGINAL

S CASE No: ~~CT677~~ CT694	DAS No:	NSF No:
Date: October 16, 2000	Data Validation Level: M1, IM1	EPA Lab Reply:
Site Name: 12th Street Landfill		Cost:
Address: 12th Street at Brandywwine River	City: Wilmington	State: DE
Latitude:	Longitude:	Anal +Val Data TAT:28 days
Program: Superfund	CERCLIS No: DESFN0305510	Activity: Removal
Account No: 01T03N50102DD330QB00	Operable Unit:	Spill ID:
Preparer: (b) (4)	RPM/PO:Michael Towle 3HS31	Site Leader: (b) (4)
Phone: 6(b) (4)	Phone: 215-814-3272	Phone: (b) (4)
FAX: 610-485-8587	FAX: 215-814-3254	FAX: 610-485-8587
E-mail: (b) (4) @ttemi.com	E-mail: towle.michael@epa.gov	E-mail: (b) @ttemi.com
EPA CO: Deborah Eble	Contract Type: START 3 Eastern Area / Prime: Tetra Tech EM Inc.	Sub:
Lab Assignment Date:	Analytical TAT: 14 days	Ship Date From: ~~10/16/00~~ 11-06-00
Organic Lab:		Ship Date To: ~~10/19/00~~ 11-06-00
Inorganic Lab:		Carrier:

SAMPLES	METHOD	PARAMETER	MATRIX
3	ILM04.1	TAL METALS	SOIL
1	ILM04.1	TAL METALS & CYANIDE	SOIL
1	OLM04.2	TCL ORGANICS	SOIL

NOTE: Data validation levels M3 & IM2 require justification. QC field samples must be included as part of total number of samples.

1. Special Instructions: OSC needs results faxed to him at the above number when they are received at RSCC.
2. Objectives / Project Plan ID / Permit ID: Verify if further cleanup is necessary.
3. Program / Project / Permit Reporting Limits As per method.
4. QO (QC Requirements) As per method.

Appendix D

Laboratory Case Narratives

No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

GC column: 30 m x 0.25 mm id (0.5 um film thickness) DB-5MS capillary column

Matrix spike and matrix spike duplicate were performed on C02Q7. Spike recoveries were within the advisory QC limits except for high recovery of pyrene in the matrix spike. RPDs were within the advisory QC limits.

Internal standard area counts were outside of QC criteria for sample C02Q7. Internal standard area counts were also outside of QC criteria in the associated matrix spike, matrix spike duplicate and the diluted run.

Sample C02Q7 was re-analyzed at dilution to ensure the all target analytes were within the instrument calibration range.

No other unusual observation was made for the analysis.

4. Pesticides/PCB Analysis:

GC column used: 30 m x 0.53 mm id (0.81 um film thickness) DB-608 and 30 m x 0.53 mm id (0.5 um film thickness) DB-1701 megabore columns

Matrix spike and matrix spike duplicate were performed on C02Q7. Spike recoveries and replicate RPDs were within the advisory QC limits.

No unusual observation was made for the analysis.

All of the submittals to the region are originals other than log book pages and copies of tunes and standard files which are shared by many other cases. For these, the original copies are archived in the laboratory.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-